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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/451,628	11/30/1999	AVI TEPMAN	AMAT/4285/MD	9301

32588 7590 08/04/2003

APPLIED MATERIALS, INC.
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EXAMINER

ALEJANDRO MULERO, LUZ L

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 08/04/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/451,628

Applicant(s)

TEPMAN ET AL.

Examiner

Luz L. Alejandro

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,8,11-16,18-22 and 28-37 is/are pending in the application.
- 4a) Of the above claim(s) 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,8,11-16,18-22,28-34,36 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Newly submitted claim 35 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claim 35 is directed to an embodiment in which the single support frame comprises adjustable feet where previous claims (see claim 14) have been directed to the single support frame comprising rollable support members

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 35 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 11, 13-16, 18-20, and 28-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Rubin et al., U.S. Patent 4,852,516.

Rubin et al. shows the invention as claimed including a multi-chamber apparatus for processing substrates including initial load lock chamber for storage 102 (see fig. 7) connected to a multitude of process chambers 100 each chamber including a modular

Art Unit: 1763

plumbing tray 172 (see fig. 1) and a chamber tray including links which include water lines, gas lines, vacuum lines, drain lines, and communication lines (see col. 3, line 65 to col. 8-line 60). Furthermore, note that any of the individual process chambers 100 of Rubin et al. can be considered a "transfer chamber" since the wafer is physically being moved from one side to the other.

With respect to claim 28, note from fig. 1 that the chamber tray and the process chamber form a modular unit. Regarding claim 11, note that the corner post 106 of adjacent chambers are at the access ports (see fig. 7). Furthermore, with respect to claim 13, the process chamber and the chamber tray are mounted to a support frame which includes all the chambers (see fig. 7). With respect to claim 14, note that the support frame includes rollable support members 110 for each chamber (see fig. 1). Regarding claim 16, note that the facility connections (water lines, gas lines, vacuum lines, drain lines, and communication lines) are in fluid communication with the facility connection of the plumbing tray 172 (see fig. 1). Furthermore, with respect to claims 18-20, note that the claimed robot transfer mechanism 180 is clearly shown in fig. 7.

With respect to claim 29, note in fig. 1 that the plumbing tray 172 is directly underneath the processing/transfer chamber 100.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 1763

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 8, 11-16, 18-19, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mooring et al., WO 99/03133 in view of Rubin et al., U.S. Patent 4,852,516.

Mooring et al. shows the invention as claimed including an apparatus for processing substrates comprising: a transfer chamber 22 comprising one or more access ports 28; one or more load lock chambers 18 disposable about the transfer chamber; one or more process chambers 14 disposable about the transfer chamber; a plumbing tray 44 disposable adjacent the transfer chamber and having facility connections for each process chamber and load lock chamber; and a chamber tray disposable adjacent each process chamber, load lock chamber and transfer chamber, the chamber tray in fluid communication with the facility connections of the plumbing

Art Unit: 1763

tray, wherein each process chamber is disposable on each chamber tray (see figures 1-4 and page 6, line 25 to page 10, line 20).

Mooring et al. fails to expressly disclose the chamber trays each having a plurality of facility connections that are in fluid communication with the facility connections of the plumbing tray.

Rubin et al. discloses a chamber tray having a plurality of facility connections including links which include water lines, gas lines, vacuum lines, drain lines, and communication lines (see col. 3, line 65 to col. 8-line 60). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Mooring et al. so as to include a chamber tray having a plurality of facility connections which are in fluid communication with the facility connections of the plumbing tray because this will enable each chamber unit to function as a stand alone unit.

With respect to the rollable members, Rubin et al. discloses rollable support members 110 in a support frame 102 of a modular apparatus (see fig. 1 and col. 3-line 63 to col. 4-line 16). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Mooring et al. so as to include the rollable support members of Rubin et al. because this allows for easier removal and insertion of the modular components of the apparatus.

Claims 1, 8, 11-16, 18-19, and 28-29 are rejected under 35 U.S.C. 103(a) as being obvious over Bright et al., U.S. Patent 6,312,525 in view of Rubin et al., U.S. Patent 4,852,516.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Bright et al. shows the invention as claimed including an apparatus for processing substrates comprising: a transfer chamber 22 comprising one or more access ports 28; one or more load lock chambers 18 disposable about the transfer

chamber; one or more process chambers 14 disposable about the transfer chamber; a plumbing tray 44 disposable adjacent the transfer chamber and having facility connections for each process chamber and load lock chamber; and a chamber tray (see valve 38, for example) disposable adjacent each process chamber, load lock chamber and transfer chamber, the chamber tray in fluid communication with the facility connections of the plumbing tray, wherein each process chamber is disposable on each chamber tray (see figures 1-4 and col. 5-line 5 to col. 7-line 46).

Bright et al. fails to expressly disclose the chamber trays each having a plurality of facility connections that are in fluid communication with the facility connections of the plumbing tray.

Rubin et al. discloses a chamber tray having a plurality of facility connections including links which include water lines, gas lines, vacuum lines, drain lines, and communication lines (see col. 3, line 65 to col. 8-line 60). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Bright et al. so as to include a chamber tray having a plurality of facility connections which are in fluid communication with the facility connections of the plumbing tray because this will enable each chamber unit to function as a stand alone unit.

With respect to the rollable members, Rubin et al. discloses rollable support members 110 in a support frame 102 of a modular apparatus (see fig. 1 and col. 3-line 63 to col. 4-line 16). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of

Art Unit: 1763

Mooring et al. so as to include the rollable support members of Rubin et al. because this allows for easier removal and insertion of the modular components of the apparatus.

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mooring et al., WO 99/03133 in view of Rubin et al., U.S. Patent 4,852,516 as applied to claims 1, 8, 11-16, 18-19, and 28-29 above, and further in view of Richards, U.S. Patent 4,584,045.

Mooring et al. and Rubin et al. are applied as above but fail to expressly disclose wherein the transfer chamber comprises two transfer robots, at least one lift, the lift comprising a support shaft, pedestal, lift assembly, and rotational assembly. Richards discloses a transfer means 84 including two transfer robots 86 and 88 which includes a pedestal, support shaft, lift assembly, and rotational assembly (see fig. 2 and its description). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Mooring et al. modified by Rubin et al. so as to include the transfer means of Richards because the transfer means of Richards are suitable for transferring wafers between chambers.

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bright et al., U.S. Patent 6,312,525 in view of Rubin et al., U.S. Patent 4,852,516 as applied to claims 1, 8, 11-16, 18-19, and 28-29 above, and further in view of Richards, U.S. Patent 4,584,045.

Art Unit: 1763

Mooring et al. and Rubin et al. are applied as above but fail to expressly disclose wherein the transfer chamber comprises two transfer robots, at least one lift, the lift comprising a support shaft, pedestal, lift assembly, and rotational assembly. Richards discloses a transfer means 84 including two transfer robots 86 and 88 which includes a pedestal, support shaft, lift assembly, and rotational assembly (see fig. 2 and its description). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Bright et al. modified by Rubin et al. so as to include the transfer means of Richards because the transfer means of Richards are suitable for transferring wafers between chambers.

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubin et al., U.S. Patent 4,852,516 in view of Richards, U.S. Patent 4,584,045.

Mooring et al. and Rubin et al. are applied as above but fail to expressly disclose wherein the transfer chamber comprises two transfer robots, at least one lift, the lift comprising a support shaft, pedestal, lift assembly, and rotational assembly. Richards discloses a transfer means 84 including two transfer robots 86 and 88 which includes a pedestal, support shaft, lift assembly, and rotational assembly (see fig. 2 and its description). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Bright et al. modified by Rubin et al. so as to include the transfer means of Richards because the transfer means of Richards are suitable for transferring wafers between chambers.

Claims 30-34 and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bright et al., U.S. Patent 6,312,525 in view of Rubin et al., U.S. Patent 4,852,516 as applied to claims 1, 8, 11-16, 18-19, and 28-29 above, and further in view of Lane et al., EP 0,843,340 A2.

Bright et al. and Rubin et al. are applied as above but fail to expressly disclose two robots located within the transfer chamber and operable in tandem to transfer a pair of substrates through the processing positions so that the pair of substrates can be processed simultaneously or nearly simultaneously. Lane et al. discloses a transfer chamber wafer handler 500 that includes two robots located within the transfer chamber and operable in tandem to transfer a pair of substrates through the processing positions so that the pair of substrates can be processed simultaneously or nearly simultaneously (see fig. 13 and its description). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Bright et al. modified by Rubin et al. so as to include the transfer chamber wafer handler of Lane et al. because this will allow for a higher throughput of the apparatus.

Response to Arguments

Applicant's arguments filed 5/19/03 with respect to the Rubin et al. reference have been fully considered but they are not persuasive. Regarding the Rubin et al. reference, applicant argues that Rubin et al. fails to show two or more process chambers disposed about a transfer chamber. However, as broadly claimed, any of the

Art Unit: 1763

coating, baking, or inspection chambers of fig. 7 can function as a transfer chamber, and therefore this transfer chamber will have two process chambers disposed about the transfer chamber, as claimed. Applicant's arguments regarding the Lei et al. reference are persuasive and that rejection has been withdrawn. Additionally, applicant's arguments concerning the Bright et al. and Mooring et al. references are rendered moot in view of the new grounds of rejection.

With respect to the argument with respect to the taking of official notice, such notice was taken in the office action mailed on 9/27/00 and never challenged. According to the MPEP, failure to seasonably challenge official notice results in the limitations being considered prior art (see MPEP 2144.03). This notwithstanding, the Richards, U.S. Patent 4,584,045 reference is provided by the examiner in response to applicant's challenge of the official notice.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 703-305-4545. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Luz L. Alejandro
Primary Examiner
Art Unit 1763

July 28, 2003